Update on Interoperable Communications PSIC Office Review

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Public Safety Interoperable Communications Office

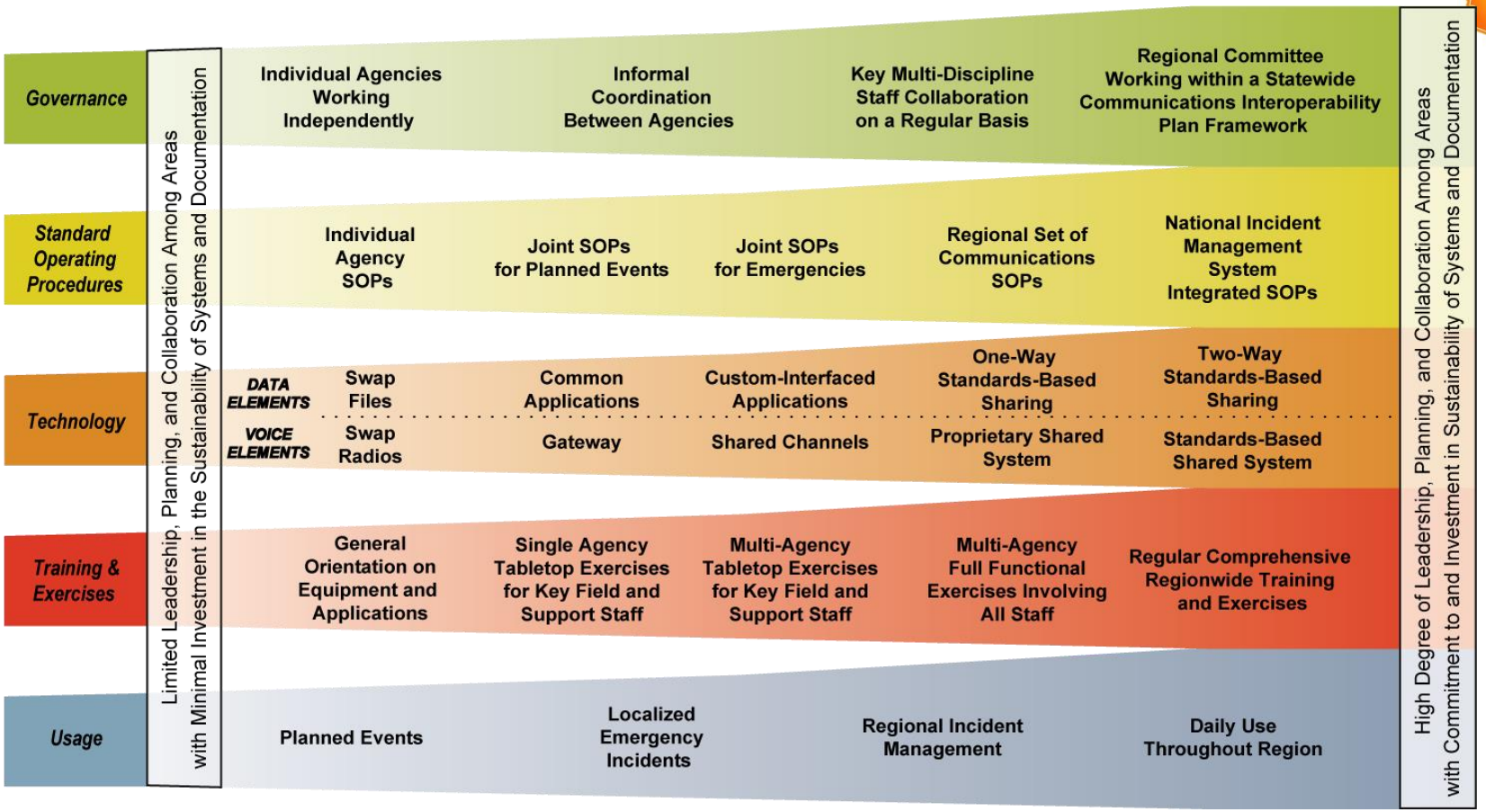
What is Interoperability?

- Emergency responders need to share vital voice and data information across disciplines and jurisdictions to successfully respond to day-to-day incidents.
- Interoperability is the ability to communicate as needed, on demand, and as authorized at all levels of government across all disciplines.
- From wildfires, to high-speed pursuits across jurisdictions, to the Super Bowl – every situation is unique and requires unique solutions.

Achieving Interoperability

- To achieve interoperability, five critical areas must be addressed:
  - Governance
  - Standard Operating Procedures (SOP)
  - Technology
  - Training and Exercise
  - Usage and Outreach

SAFECOM Interoperability Continuum



Governance

- Governance is a formalized system that provides a unified approach to decision-making to reflect shared objectives across multiple disciplines and jurisdictions.
- Strong governance is essential to interoperability because it provides a framework for planning, collaboration and implementation between and among multiple disparate communication systems and stakeholders.
- Arizona stakeholders must work continually to evolve and improve our governance model and plans to advance interoperability for Arizona.

Regional Governance

- While Arizona has taken steps to expand and improve governance structures at the state level, regional governance structures are needed and remain a work in progress.
- Arizona regions, counties, and/or localities need to develop and/or enhance existing governance structures to provide regionalized coordination and cooperation in pursuit of communications interoperability enhancements.
- In 2014 the PSIC Office will expand our efforts to provide assistance to county level governance structures in support of interoperable communications.

Governance Snapshot

Governance Capabilities	Counties
Agencies work independently without coordinated leadership, planning, or collaboration.	0
County decision-making groups are informal, and do not yet have a strategic plan in place to guide collective communications interoperability goals and funding.	4
Some formal agreements exist and informal agreements are in practice among members of a county decision making group; county strategic and budget planning processes are beginning to be put in place.	8
Formal agreements outline the roles and responsibilities of a county decision making group, which has an agreed upon strategic plan that addresses sustainable funding for collective, regional interoperable communications needs.	2
County decision making bodies proactively look to expand membership to ensure representation from broad public support disciplines and other levels of government, while updating their agreements and strategic plan on a regular basis.	1

Standard Operating Procedures

- Formal written guidelines or instructions enable emergency responders to successfully coordinate an incident response across disciplines and jurisdictions.
- Clear and effective SOPs are essential in the development and deployment of any interoperable communications solution.

Statewide PSPs

- Governance
  - PSCC - Operating Principles Document
  - SIEC - Operating Principles Document
- Training
  - Arizona Communications Unit Training Coordination Procedure
  - Arizona Regional All-Hazards Communications Unit Recognition Procedure
  - NIMS Communications Unit Workgroup (NIMS-CU) Policies and Procedures
- Technical
  - Land Mobile Radio Minimum Equipment Standards
  - Arizona Interoperable Channels Plan and Priority Programming Guide
  - Arizona Interagency Radio System (AIRS) State Plan - SOP
  - AIRS Improvement and Sustainability Plan

Tactical Interoperable Communications Plan

- The Tactical Interoperable Communications Plan (TICP) is a "master communications document" that describes the current communications capabilities of a regional area.
- Policies and procedures covered by the TICP include:
  - Agency Responsibilities and Rights
  - National Incident Management System - Incident Command System (NIMS-ICS) Principles: Channel naming conventions, plain language, National Response Framework, Unit Identification, etc…
  - Prioritization and Shared Use of Regional Interoperability Assets
  - Overarching procedures for all interoperable communications
  - Procedures for requesting, using, or discontinuing the use of shared assets
- TICP serves as a critical resource for communications personnel during an incident to enable interoperability among disparate agencies in a region.

TICP Development Status

County	Kickoff Workshop	Development Workshop	Approved / Updated
Apache	January 23, 2013	March 25, 2013	2013
Cochise (update)			2013
Coconino			2012
Gila	July 31, 2013	September 24, 2013	Pending
Graham	July 31, 2013	September 24, 2013	Pending
Greenlee	July 31, 2013	September 24, 2013	Pending
La Paz			2012
Central AZ Region (Maricopa) (Update)			2012
Mohave			2011
Navajo	February 4, 2013	March 25, 2013	2013
Pima (Update)		December 4, 2012	2012
Pinal		Update Pending	2011
Santa Cruz	March 4, 2013	April 17, 2013	2013
Yavapai	August 7, 2013	October 16, 2013	Pending
Yuma (Update)			2012

SOP Snapshot

SOP Capabilities	County
County interoperable communications SOPs are not developed or have not been formalized and disseminated.	3
Some interoperable communications SOPs exist within the county and steps have been taken to institute these interoperability procedures among some agencies.	10
Interoperable communications SOPs are formalized and in use by all agencies within the county. Despite minor issues, SOPs are successfully used during responses and/or exercise(s).	1
Interoperable communications SOPs within the county are formalized and regularly reviewed. Additionally, National Incident Management System (NIMS) procedures are well established among all agencies and disciplines. All needed procedures are effectively utilized during responses and/or exercise(s).	1

Technology

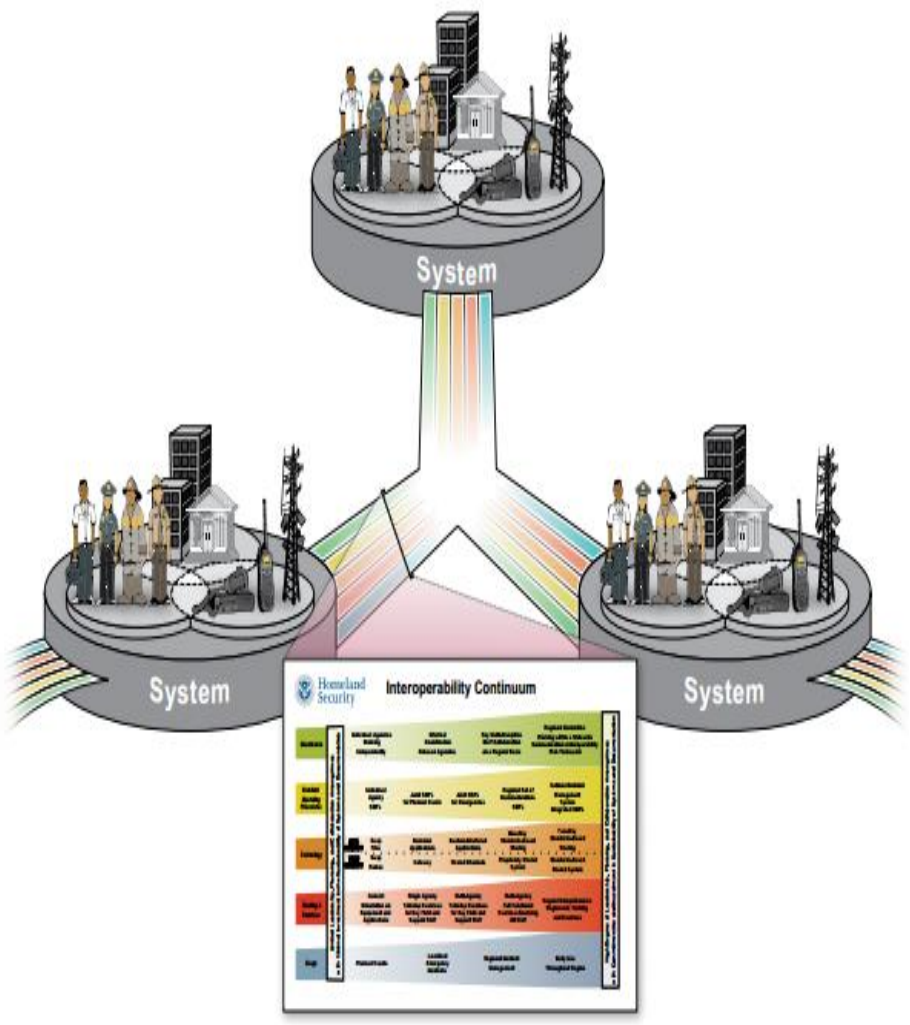
- Technology is a critical tool for improving interoperability, but it is not the sole driver of an optimal solution.
- Successful implementation of data and voice communications technology is supported by strong governance and is highly dependent on effective collaboration and training among participating agencies and jurisdictions.

Current Technology Environment

- In the urban areas of Arizona, most of the public safety agencies have either transitioned or are planning to transition to 700/800 MHz, Project 25 (P25) digital trunked radio systems.
- Many AZ rural agencies operate on separate stand-alone VHF conventional communications systems. This limits their ability to communicate with agencies on other frequency bands such as with DPS (which operates primarily on an UHF conventional communications system).
- Current Interoperability assets in Arizona include shared systems, shared channels, gateways, radio caches and other communications technologies.

Technology Strategy

- Arizona is pursuing a system-of-systems approach to interoperability, coordinating and encouraging interconnection of operable and interoperable assets to one another to provide communications between state, regional and local systems.
- Compatible technology between jurisdictions alone will not make an agency interoperable; the jurisdictions must connect policies, procedures, technology, and people to achieve interoperability.

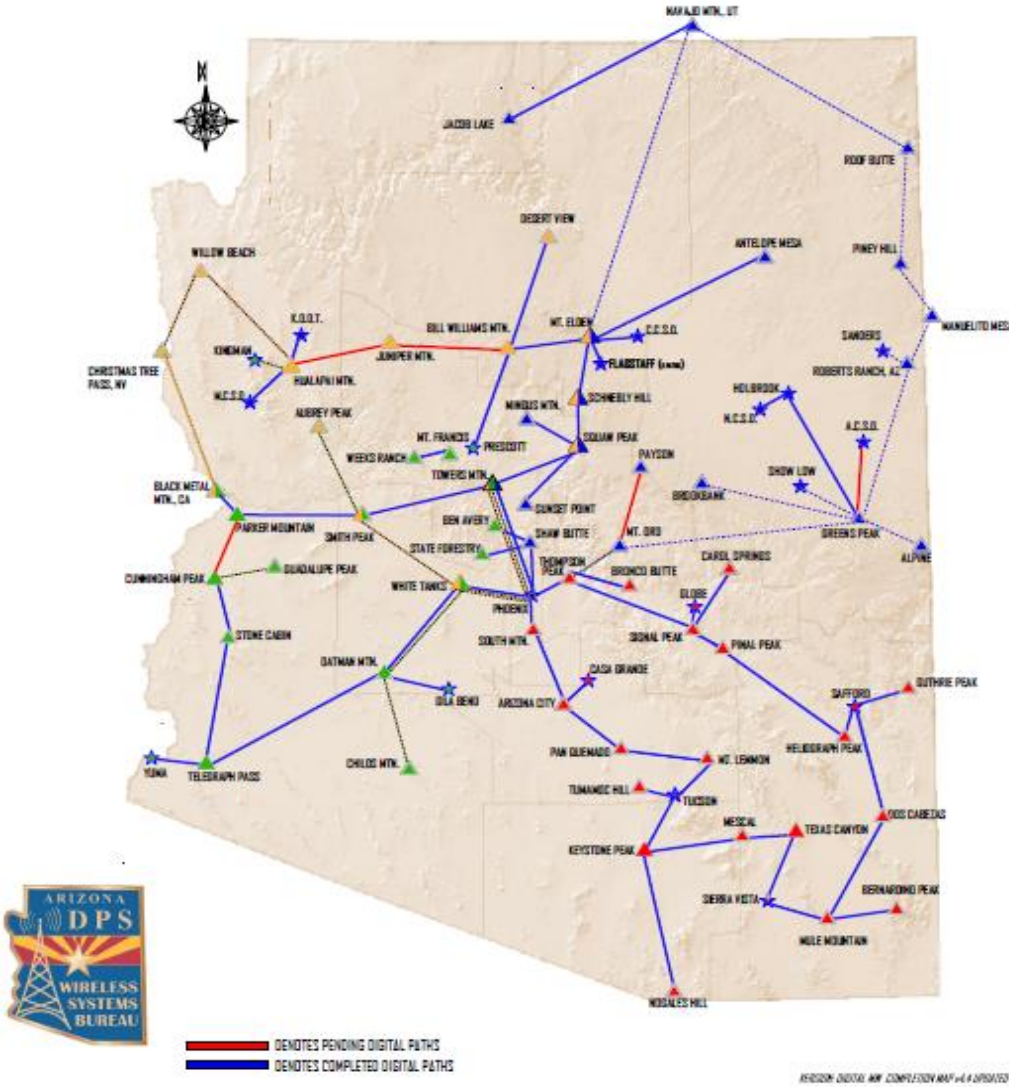


Key SCIP Technology Initiatives

- Initiative 6: Implement, Enhance and Promote Functional Regional Voice and Data Systems in Support of Interoperable Communications
- Initiative 9: Upgrade Operable Voice and Data Communication Systems for State Agencies in Support of Interoperable Communications

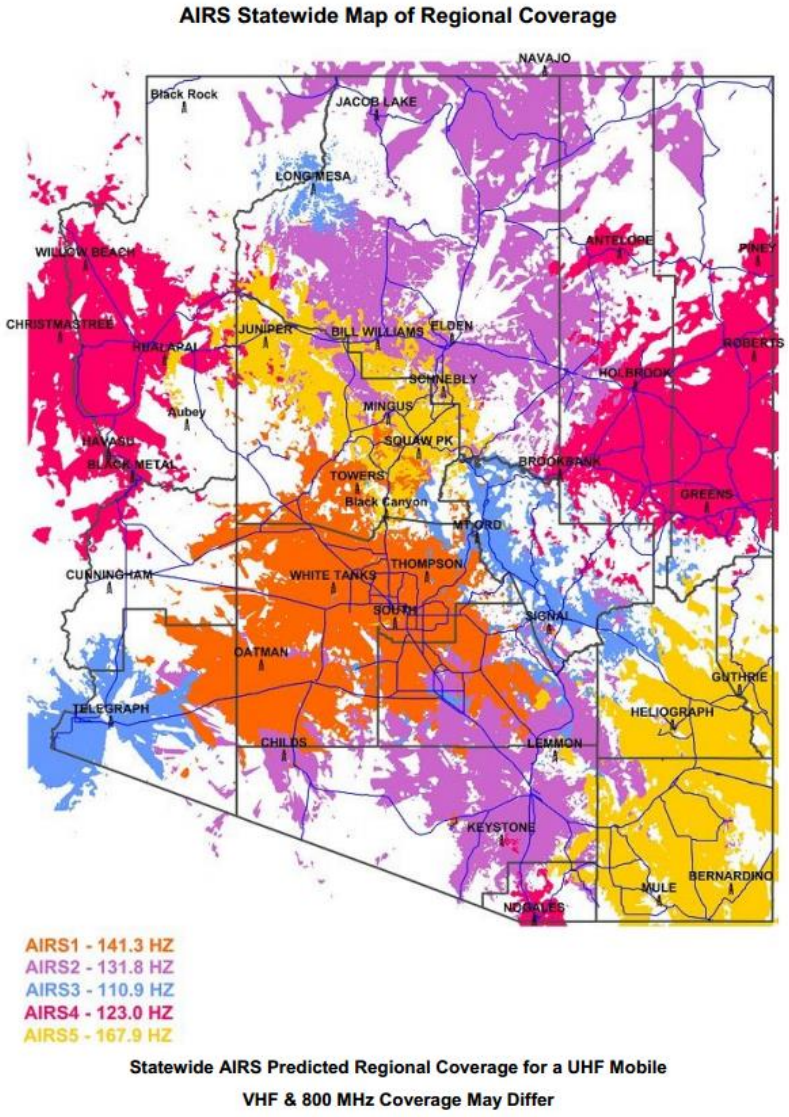
Backbone - DPS Microwave

- The current statewide microwave network is owned, operated, engineered, and maintained by DPS-WSB and provides microwave connectivity for local, state, and federal public safety and/or service agencies throughout Arizona.
- Although built primarily to support State agency radio systems, many other agencies use some portion of its capacity.
- An upgrade of the microwave backbone to digital technology is underway.
- A digital backbone must be in place for Arizona to implement a modern, standards-based, interoperable public safety radio communications system.



Statewide Simple Interoperability (AIRS)

- Arizona Interagency Radio System (AIRS) is a suite of full-time, cross-banded mutual aid channels designed to provide interoperable communications.
- AIRS provides interoperability across all three major radio bands – VHF / UHF / 800 MHz (but is limited to a single conversation).
- Initial Build-out is complete:
  - 35 Sites provide coverage to all 15 counties
  - 3 Mobile Suites (1 DPS Communications Trailer, 2 DPS Fly-Away) and Semi-permanent fly-away suite located in Havasupai
  - State EOC connected to AIRS via Microwave Link
- Governance of AIRS has been formalized (AIRS MOU, AIRS SOP)
- AIRS Training Program includes Presentation & Lesson Plan.
- Over 280 participating agencies



Statewide AIRS Predicted Regional Coverage for a UHF Mobile

VHF & 800 MHz Coverage May Differ

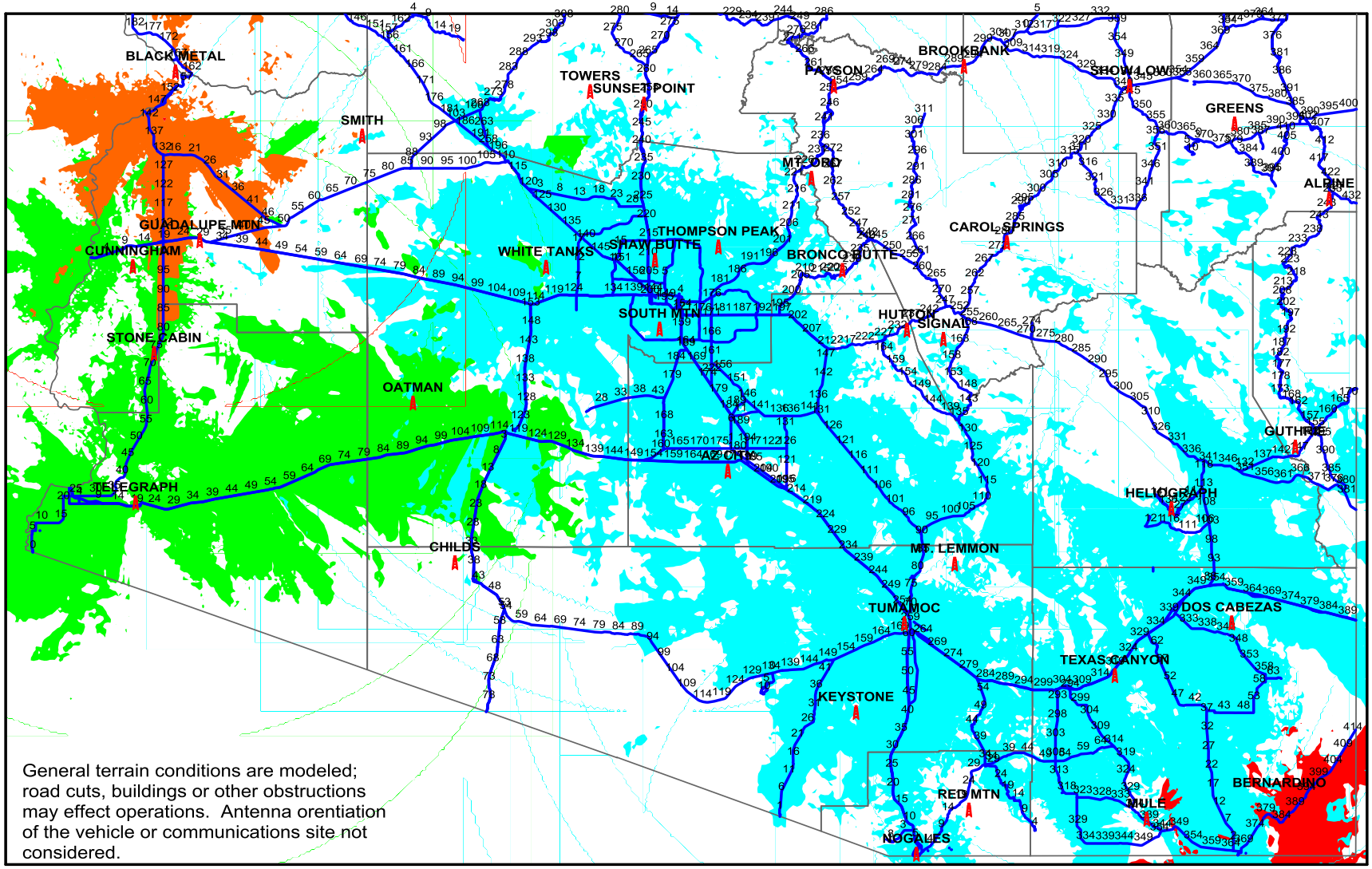
RICO Project – Connecting Systems

- Partnership between DPS, YRCS, ADOT, PSIC, etc. – to expand standards-based P25 communications capability
- Supported by the DPS upgraded microwave in Southern loop
- Conventional Channel Gateways enable patching of conventional channels with trunked talkgroups
- Utilizes the Yuma Regional Communications System (YRCS) Master Site Controller
- Expands DPS taskforce coverage in region
- Connections with the State Emergency Operations Center (EOC) and Public Safety Answering Points (PSAP) are being established to tie the PSAPs in the region and the State EOC together for interoperability
- Not currently funded for day to day operational use by local jurisdictions or for expansion into other regions.

Southeastern AZ Dispatch Channel

AZ State EOC	Douglas Police Dept	Pinal County SO
AZ DPS	Gila River Indian Community	Santa Cruz County SO
Casa Grande PD	Graham County SO	Sierra Vista PD
Cochise County SO	Nogales Police Dept	Tohono O'odham
	Pima County SO	

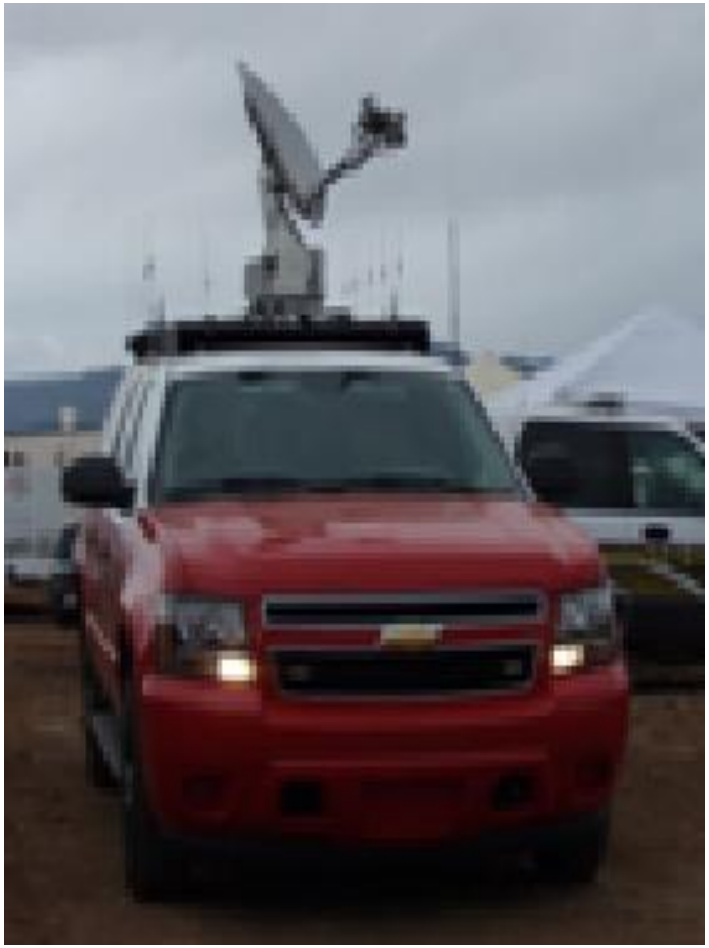
YRCS / AzWINS Radio Coverage



Deployable Repeaters

Portable Antennas

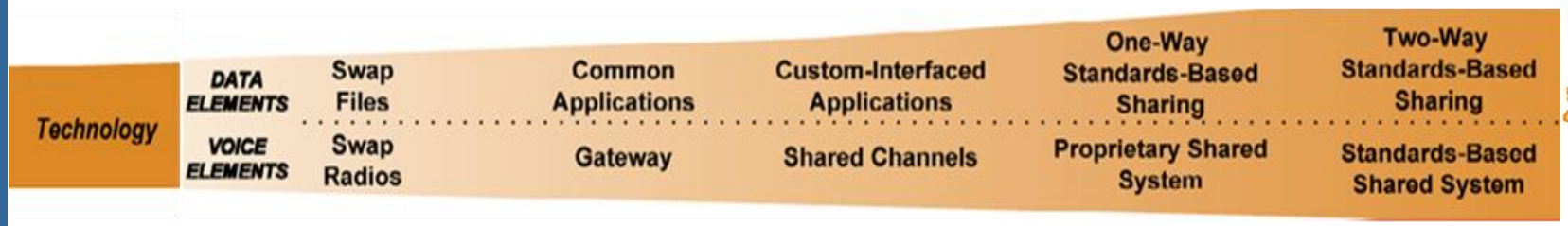
Mobile Communications Vehicles



Gateways

Satellite Coverage

Technology Snapshot



Technology Capabilities	County
Interoperability within the county is primarily achieved through the use of gateways (mobile/fixed gateway, console patch) or use of a radio cache.	6
Interoperability within the county is primarily achieved through the use of shared channels or talkgroups.	7
Interoperability within the county is primarily achieved through the use of a proprietary shared system.	1
Interoperability within the county is primarily achieved through the use of a standards-based shared system (e.g., Project 25).	1

FirstNet – Public Safety Broadband

- The First Responder Network (FirstNet) Authority has been tasked with building a nationwide wireless public safety broadband network (NPSBN) to be used by Federal, Tribal, State and Local public safety agencies.
- Once built out, it will be run and maintained by FirstNet as a self-supporting, fee-based network.
- Some already use data, but 4G LTE will allow more and faster data – video, building plans, real-time GIS mapping, etc.
- What will this cost? No one knows for sure, however, Arizona should be prepared to participate in the advancements which are offered.

What is it?

- National Public Safety Broadband Network (NPSBN)

  = Broadband = 4G LTE = FirstNet = FirstNet Network

- A cellular data network like Verizon or AT&T but separate and only for Public Safety - both primary (Law, Fire, EMS) and secondary (Department of Transportation, Public Works, Utilities)

- Primarily for data: license, registration, wants & warrants, building plans, physicians desk reference information

- Will be a platform for public safety specific applications
  - CPR alerts to trained citizens/members
  - Situational awareness through GIS Mapping

FirstNet exists to serve public safety.

PERCEPTION	REALITY
Public safety may have to give up autonomy and control.	FirstNet will be a nationwide platform; Public safety sets rules locally.
Public safety will lose management of devices, users and talk groups.	Public safety will maintain local management.
FirstNet will cost too much to build and operate.	FirstNet has substantial opportunities to partner to lower construction and operating costs.
States can use FirstNet spectrum to generate revenue.	Fees from the use of FirstNet spectrum must , by law, be reinvested to build, operate, maintain, and improve the network.
FirstNet will replace LMR networks.	FirstNet will augment LMR for many years.
FirstNet has already begun designing the network.	FirstNet is in the research and analysis phase and must have input from states and territories to design the network.

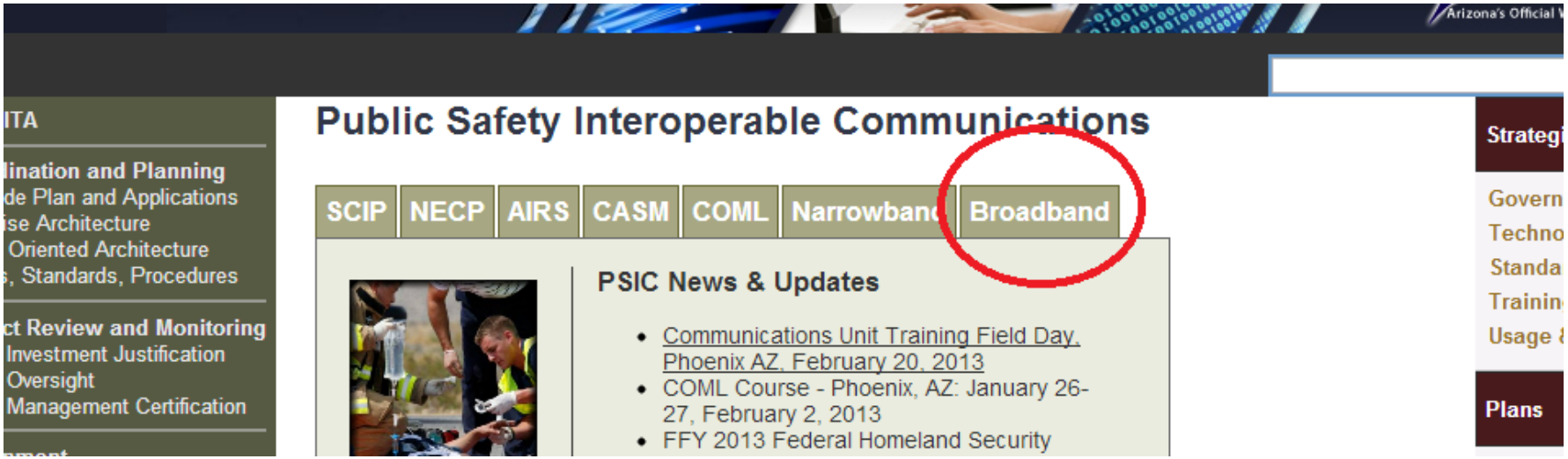
2014 Education & Outreach Efforts

- January – July - County Kickoff meetings
- December – June – Regional Wireless Systems Board Meetings
- Outreach to Public Safety Associations
- AZ Broadband website: http://azpsic.gov/library/broadband

Public Safety Broadband

How to get involved and stay informed:

- Please track progress on the PSIC Office website Broadband page
- Sign up for our interested parties email list
- Contact Michael Britt, PhD, PSIC Project Manager, 602-300-2633



Training & Exercises

- Implementing effective training and exercise programs is essential for ensuring that technology actually works as planned and that responders are able to show that they can effectively communicate using that technology.
- Training is an ongoing effort to ensure that appropriate users achieve and maintain mission critical interoperable communications competencies.

Communications Unit Training

- During all-hazards emergency response operations, radio communication among multiple jurisdictions and disciplines is essential. Trained communications professionals working to achieve interoperability among responding agencies can significantly improve communications during an emergency incident.
- The PSIC office works with ADEM (State Training Officer) to coordinate training opportunities for individuals to serve as All-Hazards Communications Unit Leaders (COML) or All-Hazards Communications Unit Technicians (COMT).

Training Snapshot

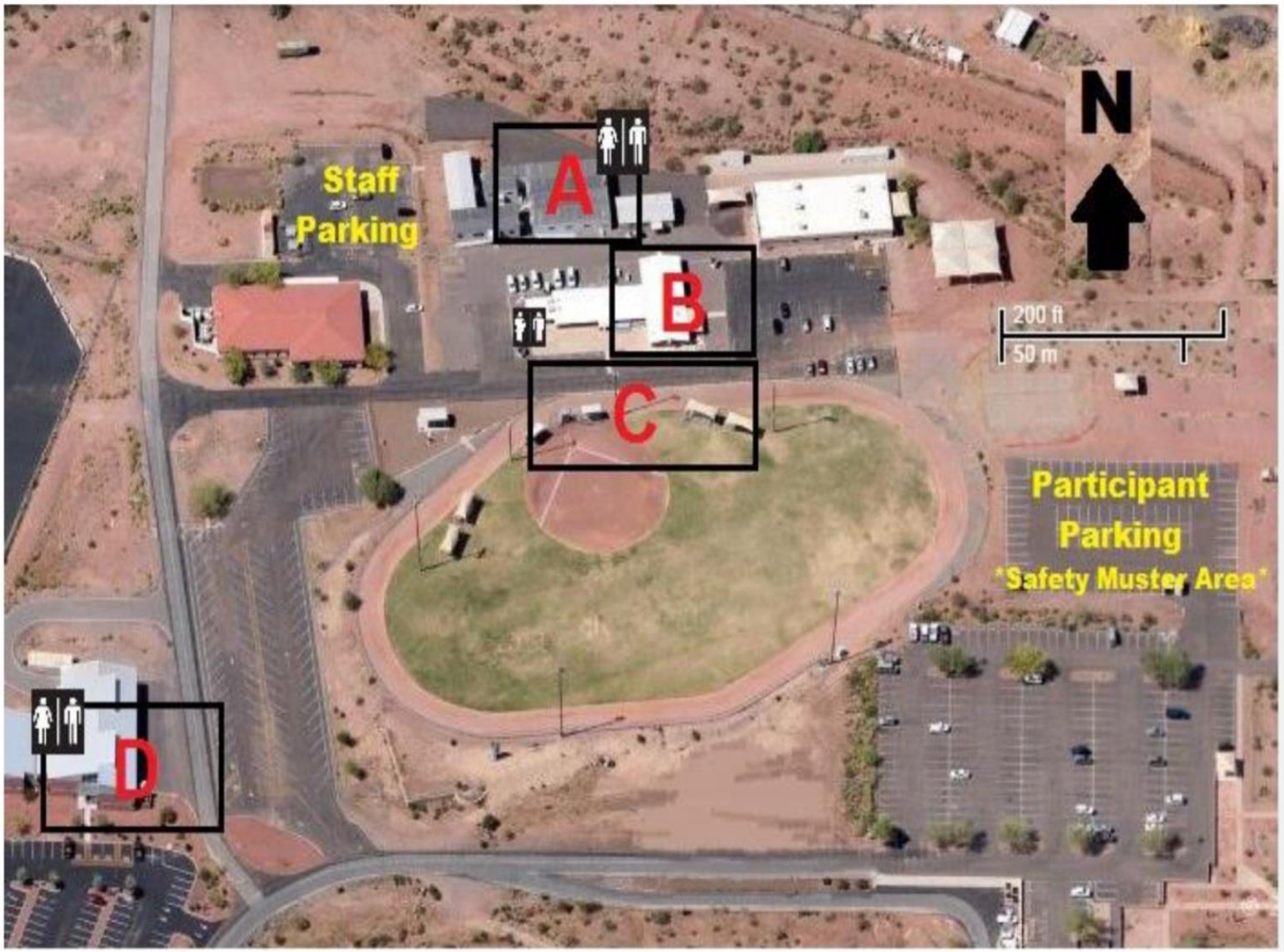
- The PSIC Office collaborated with ADEM and county emergency management offices in 2013 for six COML courses training 63 students and two All-Hazards COMT courses training 36 students.

	COML		COMT	
	Trained	Recognized	Trained	Recognized
Discipline				
Emergency Management	21	5	13	2
Fire	68	6	23	-
Health Care	4	1	1	-
Law Enforcement	74	4	27	3
Other	86	4	18	-
Totals	**253** *(from AZ; since 2009)*	**20**	**82**	**5**

Training Field Day

- Arizona's first Communications Unit Training Field Day was held on February 20, 2013.
- The field day was open to individuals who completed the initial COML or COMT classroom training and wished to get their taskbooks signed off in order to become recognized as a regional COML or COMT.
- A total of 27 trainees participated, representing 19 agencies from 5 counties.

The Field Day venue was located at the Papago Park Military Reservation (PPMR): 5636 East McDowell Road, Phoenix, AZ 85008



The letters on the map above represent the four Tech Areas:

A =	B =	C =	D =
Joint Information Center (JIC)	Log Cabin	Softball Field (MCU Area)	Civil Support Team (CST) Conference Room

Communications Focused Training

- Arizona has developed a cadre of 8 OEC approved COML instructors and two OEC approved COMT instructors.
- PSIC advocates for training technical assistance from DHS through the Interoperable Communications Technical Assistance Program (ICTAP).
  - Requested a Train the Trainer class for COMT
- Other Communications Focused Training:
  - 2013: The Value of the Communications Unit Seminar
  - 2012: Effectively Incorporating Communications into Public Safety Exercises
  - 2011: Integrating Communications Units Into the NIMS / ICS Structure

Exercises

- Organized by ADEM and local emergency managers, Arizona has conducted dozens of tabletops and full-scale training exercises at the local level, and held annual statewide exercises involving first responders, volunteers and members of the private sector.
- PSIC is responsible for advocating for the inclusion of interoperable communications components in these exercises and providing education to stakeholders on how to incorporate interoperable communications into exercises.
- If an exercise is planned with preset communications there is little ability to identify and solve interoperable communication challenges and learn from real life scenarios facing members of response teams.

PSIC Exercise Activities

- PSIC works with ADEM to ensure communications are evaluated as a part of the annual statewide exercises.
- PSIC advocates for communications focused exercise technical assistance for Arizona through ICTAP:
  - 2009: Yuma Regional Tabletop Communications Exercise
  - 2013: Coconino County Tabletop Communications Exercise
  - 2013: Yuma Regional Functional Exercise
- PSIC participates in Training and Exercise Plan Workshops conducted by State and local agencies to ensure communications are prioritized.

Training & Exercises Snapshot

Training & Exercise Capabilities	County
County public safety agencies participate in communications interoperability workshops, but no formal training or exercises are focused exclusively on emergency communications.	6
Some public safety agencies within the county hold communications interoperability training on equipment and conduct exercises, although not on a regular cycle.	8
Public safety agencies within the county participate in equipment and SOP training for communications interoperability and hold exercises on a regular schedule.	1
Public safety agencies within the county participate in equipment and SOP training for communications interoperability and hold exercises focused exclusively on emergency communications on a regular schedule.	0

Usage

- Usage refers to how often interoperable communications technologies are used.
- Local agencies that utilize interoperable equipment for day-to-day situations and emergencies are able to more effectively interoperate with other agencies.
- Success in this element is contingent upon progress and interplay among the other four elements on the Interoperability Continuum.

Usage Snapshot

Usage Capabilities	County
First responders in the county seldom use interoperability solutions unless advanced planning is possible (e.g., special event).	3
First responders in the county use interoperability solutions regularly for emergency events, and in a limited fashion for day-to-day communications.	10
First responders in the county use interoperability solutions regularly and easily for all day-to-day, task force, and mutual aid events.	2
Regular use of interoperability solutions for all day-to-day and out-of-the ordinary events in the county on demand, in real time, when needed, as authorized.	0

Arizona received over $200K in Technical Assistance (TA) in 2013

- Communications Focused Table Top Exercise – Coconino County
- All-Hazards Communications Unit Technician Course - Flagstaff
- Mobile Communications Unit Support - Statewide
  - Concept of Operations Document (SOP)
  - Video SOP Development
- Outreach, planning, and data collection for Broadband – Statewide
- Border Interoperability Demonstration Project (BIDP) - Yuma County
  - Tactical Interoperable Communications Field Operations Guide
  - Communications-Focused Functional Exercise
  - Communications-Focused Exercise Workshop
  - Standard Operating Procedure (SOP) Development

FFY2014 TA requests to OEC

- TRG-COMT TTT: Communications Unit Technician Train-The-Trainer Course
- OP-COMMEX: All-Hazards Communications Unit Exercise
- TIC-FOG: Tactical Interoperable Communications Field Operations Guide (TICFOG) Development
- TRG-AUXCOMM: Auxiliary Communications Workshop
- SOP-DEV: Standard Operating Procedure (SOP) Development Workshop – ADEM's Alert, Warning and Notification Plan

Major Activities For 2014

- Statewide Communications Interoperability Plan (SCIP) Revision
- Continue closing gaps and improving capabilities identified during the NECP Goal Two process
- Establish informal governance structures in counties where none exist – continue to support established governance structures
- Support DPS in planning and implementing Initiative 9:
  - Upgrade Operable Voice and Data Communication Systems for State Agencies in Support of Interoperable Communications
- Training: At least 1 COMT class, 3 COML classes, and the Communications Unit Field Day

Thank You!

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